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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,738	01/16/2007	Takeo Eguchi	075834.00567	5476

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EXAMINER

MRUK, GEOFFREY S

ART UNIT	PAPER NUMBER
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2853

MAIL DATE	DELIVERY MODE
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10/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,738	EGUCHI ET AL.	
	Examiner	Art Unit	
	Geoffrey Mruk	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitani et al. (US 5,697,144).

With respect to claim 1, Mitani discloses a liquid discharge device having a liquid discharge head in which a plurality of liquid discharge portions are arrayed on a substrate, each of said liquid discharge portions comprising:

- a liquid chamber (Fig. 1, element 12) for storing a liquid to be discharged,
- ejection force supplying means (Fig. 1, element 3) disposed within said liquid chamber, for providing the liquid within said liquid chamber with ejection force, and
- a nozzle for discharging the liquid (Fig. 1, element 13) stored in said liquid chamber by actions of said ejection force supplying means,
- said liquid discharge device further comprising:
- individual channels (Fig. 1, elements 10, 14, 15), separated by barrier walls, provided for each of said liquid discharge portions (Fig. 1, element 12) so as to communicate with said respective liquid chamber (Fig. 1, element 9) and supply liquid to said respective liquid chamber; and

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- a contiguous common channel (Fig. 1, element 16) disposed across each of to said plurality of individual channels so as to communicate with each of said plurality of individual channels and for supplying liquid to said plurality of individual channels (Column 6, lines 63-66);
- said contiguous common channel being comprised of
- a first common channel portion (Fig. 1, element 15) provided on a liquid supply source side, and
- a second common channel portion (Fig. 1, element 9) provided between said first common channel portion and said individual channels, and having liquid channel resistance greater than that of said first common channel portion (Column 1, lines 54-56; Column 5, lines 62-64).

With respect to claim 2, Mitani discloses the channel cross-sectional area of said second common channel portion (Fig. 1, element 9) perpendicular to a supply direction of said liquid through said second common channel portion is formed smaller than the channel cross-sectional area of said first common channel portion (Fig. 1, element 15) perpendicular to a supply direction of said liquid through said first common channel portion, thereby setting the channel resistance of said second common channel portion greater than the channel resistance of said first common channel portion (Column 1, lines 54-56).

With respect to claim 3, Mitani discloses at least a part of said second common channel portion (Fig. 1, element 9) is comprised of at least a part of said liquid discharge head (Fig. 4a, element 3).

With respect to claim 4, Mitani discloses said second common channel portion (Fig. 1, element 9) is formed such that the channel resistance as to the movement direction of liquid (Fig. 1, element 13) to the plurality of individual channels with which said second common channel portion communicates is substantially constant (Column 8, lines 12-13).

With respect to claim 5, Mitani discloses a plurality of said liquid discharge heads (Fig. 5) are provided, and said second common channel portion (Fig. 4a, element 9) of said plurality of said liquid discharge heads (Fig. 5) is formed so as to have substantially constant channel resistance (Fig. 5, i.e. symmetry of the printhead).

With respect to claim 6, Mitani discloses said second common channel portion (Fig. 1, element 9) is formed so as to have generally the same channel flow direction as said individual channels (Fig. 1, elements 14, 15).

With respect to claim 7, Mitani discloses at least a part of a wall (Fig. 4a, element 8) comprising said second common portion (Fig. 1, element 9) channel is a face of said substrate (Fig. 1, element 1) where said individual channels (Fig. 1, elements 10, 14, 15) are provided.

With respect to claim 8, Mitani discloses at least a part of a wall comprising said second common channel portion (Fig. 1, element 9) is said substrate (Fig. 1, element 8) where said individual channels are provided (Fig. 1, elements 10, 14, 15), and further is formed of a same material (Column 6, line 65) as the material comprising said liquid discharge portions or said individual channels (Fig. 1, elements 10, 14, 15).

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With respect to claim 9, Mitani discloses said substrate (Fig. 1, element 1) has a face perpendicular to or generally perpendicular to a face where said individual channels (Fig. 1, elements 10, 14, 15) are provided, and at least a part of a wall comprising said second common channel portion (Fig. 1, element 9) is said perpendicular or generally perpendicular face as one wall face.

With respect to claim 10, Mitani discloses at least a part of a wall comprising said second common channel portion (Fig. 1, element 9) is a face of said substrate (Fig. 1, element 1) where said individual channels are provided (Fig. 1, elements 10, 14, 15), and wherein said substrate has a face perpendicular to or generally perpendicular to a face where said individual channels are provided (Fig. 1, elements 10, 14, 15), with at least a different part of a wall comprising said second common channel portion (Fig. 1, element 9) is said perpendicular or generally perpendicular face.

With respect to claim 11, Mitani discloses pillars (Fig. 4a, element 8) are formed in said second common channel portion (Fig. 1, element 9).

With respect to claim 12, Mitani discloses a flow direction of liquid in the entire length of the second common channel portion (Fig. 1, element 9) is perpendicular to a flow direction of liquid in said individual channels (Fig. 1, elements 10, 14, 15).

With respect to claim 13, Mitani discloses a flow direction of liquid in the entire length of the second common channel portion (Fig. 1, element 9) is perpendicular to a flow direction of liquid in said individual channels (Fig. 1, elements 10, 14, 15).

With respect to claim 14, Mitani discloses a flow direction of liquid in a first part of the second common channel portion (Fig. 1, element 9) is perpendicular to a flow

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direction of liquid in said individual channels (Fig. 1, elements 10, 14, 15), and a flow direction of liquid in a second part of the second common channel portion is parallel to a flow direction of liquid in said individual channels.

With respect to claim 15, Mitani discloses a flow direction of liquid in a first part of the second common channel portion (Fig. 1, element 9) is perpendicular to a flow direction of liquid in said individual channels (Fig. 1, elements 10, 14, 15), and a flow direction of liquid in a second part of the second common channel portion is parallel to a flow direction of liquid in said individual channels.

With respect to claim 16, Mitani discloses pillars (Fig. 4a, element 8) are formed in said second part of said second common channel (Fig. 4a, element 9) portion but not in said first part of said second common channel portion (Fig. 4a, element 9, i.e. bottom portion).

With respect to claim 17, Mitani discloses pillars (Fig. 4a, element 8) are formed in said second part of said second common channel portion (Fig. 4a, element 9) but not in said first part of said second common channel portion (Fig. 4a, element 9, i.e. bottom portion).

Response to Arguments

Applicant's arguments filed 17 June 2008 have been fully considered but they are not persuasive. The applicant argues "Specifically, these structures do not form a contiguous common channel, but rather, provide individual through-holes that supply the only common channel 10 of the disclosure." However, the examiner respectfully

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disagrees. As stated in the final rejection, Mitani discloses the contiguous common channels (Fig. 1, elements 9, 10, 14, 15, 16). Therefore, Mitani meets the claimed limitations. The examiner makes of record several errors in applicant's response. First, claims 1, 2, 4, and 11-14 have not been cancelled. Second, new claims 11-17 have been added.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey Mruk whose telephone number is (571)272-2810. The examiner can normally be reached on Monday-Friday 7:30am - 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./
Examiner, Art Unit 2853
10/13/2008

/Stephen D Meier/
Supervisory Patent Examiner, Art Unit 2853